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Description

This invention relates to a suppository base. More particularly, it relates to a fat composition which shows excellent setup characteristics when cast into a container and is highly stable to chemicals.

Suppositories have been employed as means for administering drugs for a long time. Recent development in suppository bases as well as the techniques for the preparation of the same and clarification of the mechanism of the absorption and metabolism of medicines have made suppositories available not only in topical treatments, for example, at the anus, but also in systemic ones, for example, the administration of contrastimulants and antibiotics. Furthermore, since the low side effects of suppositories facilitate their administration, they have been gradually accepted as domestic medicines of sufficiently wide applications.

A suppository base must have an extremely narrow plastic region, i.e. it should maintain sufficient hardness when in the solid state but melt at around the body temperature. Thus cacao butter has been employed for this purpose. However cacao butter has the disadvantage that it has a high iodine value, i.e. around 34 which makes the fat liable to oxidation on prolonged storage, and thus can result in inactivation of drugs contained in the suppositories. Therefore fat compositions mainly comprising lauric acid, which show melting properties similar to those of cacao butter, have been widely employed as substitutes therefor. Examples of these compositions are those obtained by blending lauric-type fats such as coconut or palm kernel oil with palm oil and subjecting the mixture to transesterification followed by hardening. Further there have been disclosed methods for improving the insufficient hardness and setup rate of such a lauric-type fat composition as mentioned above, which comprises removing glycerides of low molecular weight and low melting point including fatty acids having eight to ten carbon atoms by combining transesterification with molecular distillation (cf. Japanese Patent Publication No. 16594/1984 and No. 16595/1984). However synthetic fat compositions prepared by fractionally distilling fatty acids of hardened lauric-type fats to remove lower fatty acids and esterifying a mixture of fatty acids mainly having 12 to 18 carbon atoms with a polyhydric alcohol such as glycerol are generally employed. These lauric-type fats have excellent properties for suppository base, i.e., an appropriate hardness and melting properties, although there are still some disadvantages to be overcome.

In the case of a suppository base comprising lauric-type fats having a relatively high hydroxyl value, i.e., more than 20, molten suppository materials may be directly cast into a container and intensely cooled by, for example, ice-cooling. Thus, supercooling, of the base in the cooling step may be prevented and the setup characteristics of the base are relatively good, which makes the moulding easy. Such bases as mentioned above have been widely employed in mass-production in factories and the products thus obtained are very firm and display little pinhole formation or cracking.

However, in the case of a suppository comprising a base having a relatively high hydroxyl value, i.e., more than 20, and containing a drug having acid group(s) such as aspirin, an increase in the content of free salicylic acid would inactivate the pharmacological effect of the medicine with the passage of time. Thus, free hydroxyl groups in the base would catalytically react with easily-hydrolysed drugs such as antibiotics, biochemical preparations and enzymes, resulting in the separation of these medicines or a decrease in the titer of the same.

Thus a base of a lower hydroxyl value should be employed in order to prevent the inactivation of these medicines (cf. Japanese Patent Laid-Open No. 52212/1983). As disclosed in H.P. Fiedler: "Lexikon der Hilfstoffe für Pharmazie, Kosmetik und angrenzende Gebiete", vol.2, L-2, ed.2, 81, pg 883, it is desirable to use a base having a hydroxyl value of 20 or below, preferably 10 or below. However there is a serious problem in the setup characteristics and workability of the suppositories in this case. That is to say, the poor setup characteristics of a base of low hydroxyl value significantly lower the workability of the suppository in the moulding step, i.e. casting and cooling. Further supercooling would result in the sedimentation of medicines during moulding and intense cooling such as ice-cooling would cause problems including pinhole formation and cracking.

As described above, the chemical stability, moldability and workability of lauric-type fats are still insufficient in spite of the excellent properties of the same as a suppository base. Therefore lauric-type fat bases of low hydroxyl numbers, which have insufficient moldability and workability, are used for drugs which are liable to be inactivated, e.g., decomposed and discolored, while those having high hydroxyl values are used for relatively-stable drugs. Thus, lauric-type fat bases of different hydroxyl values are employed depending on the nature of the drugs to be administered.

However various medicines have been formulated into suppositories with recent progress in the application of the same. Further it is required to establish techniques for mass-production thereof. Thus it has been demanded to develop a highly effective suppository base having a high chemical stability as well

as excellent moldability and workability.

It is an object of the present invention to provide a suppository base mainly comprising lauric-type fats of a high chemical resistance as well as excellent moldability and workability without causing any deterioration in the physical properties thereof such as melting properties and hardness. Thus, it is intended to provide an excellent suppository base of high mouldability and workability which has a hydroxyl value of 20 or below, preferably 10 or below, exhibits excellent setup characteristics in moulding and displays no disadvantages such as pinhole formation or cracking even when subjected to forced cooling such as ice-cooling from an overheated molten state.

In order to achieve the above object, we have carried out detailed investigations on a glyceride composition mainly comprising diglycerides and forming hydroxyl groups in a lauric-type fat base and have consequently found that a suppository base comprising specific lauric-type fats combined with non-lauric-type diglycerides of fatty acids having 14 to 22 carbon atoms has a high chemical stability as well as excellent mouldability and workability, thus completing the present invention.

Accordingly, the present invention relates to a suppository base which comprises 80 to 99% by weight of lauric-type fat composition having a hydroxyl value of 20 or below and containing glycerides of fatty acids having 8 to 18 carbon atoms, and 1 to 20 % by weight of non-lauric-type diglycerides of fatty acids having 14 to 22 carbon atoms. In order to further improve the effect of the suppository base of the present invention, it is desirable to blend 90 to 99 % by weight of lauric-type fat having a hydroxyl value of 10 or below and containing glycerides of fatty acids having 8 to 18 carbon atoms as main components with 1 to 10 % by weight of diglycerides of fatty acids having 14 to 22 carbon atoms.

The blending ratio between the lauric-type fat and the non-lauric-type diglyceride constituting the suppository base of the present invention may be varied within the above range without significantly damaging the physical properties thereof required as a suppository base. Further the fatty acids constituting the lauric-type fat and the non-lauric-type glycerides may be varied to thereby appropriately adjust the physical properties thereof.

The suppository base of the present invention having a hydroxyl value of 20 or below does not inactivate medicines unstable to free hydroxyl groups. When medicines more unstable to hydroxyl groups are to be blended, it is desirable to employ a base of a hydroxyl value of ten or below. In each case, the combination of the lauric-type fat and non-lauric-type glyceride makes the setup characteristics of the base in molding excellent and provides a preferable suppository product showing neither pinhole nor cracking, in spite of the low hydroxyl value of the base.

A suppository base of a hydroxyl value exceeding 20 shows significantly improved setup characteristics compared with a conventional lauric-type fat base having a similar hydroxyl value. However the former is unavailable in the formulation of a highly decomposable medicine. Thus the amount of the non-lauric-type diglyceride to be blended into a suppository base should not exceed 20 % by weight. On the other hand, a suppository base containing less than 1 % by weight of non-laurate diglyceride can not exhibit such excellent moldability and workability as required in the present invention.

The lauric-type fats used as the base of the present invention may be those prepared by treating, for example, hardening, fractionating, transesterifying or distilling raw oils such as coconut, palm kernel or palm oil. In order to further improve the effect of the base of the present invention, it is desirable to employ fats mainly comprising glycerides of saturated fatty acids having 12 to 18 carbon atoms without any lower fatty acid having eight to ten carbon atoms as the lauric-type fats.

The process for the preparation of the non-lauric-type diglyceride constituting the base of the present invention, i.e., the one comprising fatty acids having 14 to 22 carbon atoms is not particularly restricted. A preferable example of the same is as follows. An excessive amount of glycerol is added to a vegetable oil such as palm, soybean or rapeseed oil or a mixture of these hardened oils to thereby perform random transesterification in the presence of an alkaline catalyst. The transesterified fat thus obtained is treated by molecular distillation, column chromatography or solvent fractionation to thereby give the aimed diglyceride product.

The suppository base of the present invention exhibits a sufficient chemical stability as well as excellent moldability and workability without damaging the melting properties and hardness which are required as a base. Namely the suppository base of the present invention gives no trouble such as cracking or pinhole in molding while maintaining a low hydroxyl value. Thus it makes possible, in particular, the mass-production of suppositories comprising chemically unstable medicines.

The suppository base according to the invention is applicable to various suppository preparations such as a steroid hormone, a local anesthetic, an antipyretic analgesic, an antiphlogistic and a drug for controlling intestinal function and consipation.

Pharmacologically effective agents are preferably listed below.

The steroid hormone includes hydrocortisone acetate, hydrocortisone, prednisolone acetate, prednisolone, dexamethasone acetate, dexamethasone, betamethasone, betamethasone valerate and fluocinolone acetonide.

The local anesthetic includes procaine hydrochloride, procaine, lidocaine, lidocaine hydrochloride, dibucaine hydrochloride, dibucaine, cocaine, ethyl amino-benzoate, meprylcaine hydrochloride and hexylcaine hydrochloride.

The antipyretic analgesic includes acetyl salicylic acid (aspirin as a tradename), acetoaminophene, acetophenetidin (phenacetin as a tradename), diclofenac sodium, mefenamic acid, flufenamic acid, choline salicylate, salicylic amide, aminopyrine, antipyrine, Sulpyrine, phenylbutazone, clofezone, ibuprofen, naproxen, ketoprofen, piroxicam and tiaramide hydrochloride.

The non-steroid antiphlogistic includes Allantoin, indomethacin, glycyl-lysine, glycyrrhetic acid, camphor, ichthammol and bufexamac.

The drug for controlling intestinal function and constipation includes sodium pyrosulfate, glycerine, berberine chloride, albumin tannate, berberine tannate and dimethicone.

According to the invention, a medicine is kept stably in the suppository and discharged selectively from the suppository when used. The pharmacological effect depends greatly on the discharging property of a suppository. In this respect, the invention provides an unexpected improvement and enhances the discharging property. Accordingly a medicine contained in the suppository of the invention is well absorbed into the body of a patient and the bioavailability is increased. This is improved in comparison with use of a surfactant such as lecithine and polysorbate.

It is preferable that the suppository contains 0.005 to 0.5 wt. % of a steroid hormone, 0.25 to 5 wt.% of a local anesthetic, 0.5 to 10 wt.% of an antipyretic analgesic, 0.5 to 5 wt.% of a non-steroid antiphlogistic or 0.5 to 10 wt.% of a drug for controlling the intestinal function and constipation.

Brief Description of Drawings

Fig. 1 and 2 show an improvement of the invention in the discharging property of a medicine contained, proved in Example 4.

The invention will be illustrated in reference with working examples.

Example 1 to 3 and Comparative Example 1 to 6 Preparation of lauric-type fat

Lauric-type fat (A): 55 g of lauric acid, 21 g of myristic acid, 9 g of palmitic acid, 15 g of stearic acid and 14 g of glycerol were maintained at 230° C under a nitrogen atmosphere in the absence of any catalyst for eight hours to thereby perform esterification through dehydration. Then the water and unreacted fatty acids were removed at a diminished pressure of 1 mmHg at 230° C to thereby give 103 g of lauric-type fat (A).

Lauric-type fat (B): 60 g of lauric acid, 21 g of myristic acid, 13 g of palmitic acid, 6 g of stearic acid and 12 g of glycerol were maintained at 230° C under a nitrogen atmosphere in the absence of any catalyst for eight hours to thereby perform esterification through dehydration. Then the water and unreacted fatty acids were removed at a diminished pressure of 1 mmHg at 230° C to thereby give 101 g of lauric-type fat (B).

Lauric-type fat(C): 52 g of lauric acid, 21 g of myristic acid, 10 g of palmitic acid, 17 g of stearic acid and 17 g of glycerol were maintained at 230° C under a nitrogen atmosphere in the absence of any catalyst for eight hours to thereby perform esterification by dehydration. Then the water and unreacted fatty acids were removed at a diminished pressure of 1 mmHg at 230° C to thereby give 103 g of lauric-type fat(C).

Lauric-type fat(D): 0.2 g of sodium methylate was added to an oil composition comprising 91 g of hydrogenated coconut oil having an iodine value of 0.4 and 9 g of hydrogenated palm oil having an iodine value of 0.7. The mixture was stirred in a nitrogen stream at 70° C for 60 minutes to thereby perform random transesterification. Then it was purified in a conventional manner to thereby give 97 g of lauric-type fat (D).

Preparation of diglyceride

Diglyceride (I): 375 g of palm oil having an iodine value of 52.0 and 375 g of hydrogenated palm oil having an iodine value of 0.7 were blended with 250 g of glycerol. 0.1 % by weight based on the total system of calcium hydroxide was added thereto and the mixture was stirred under a nitrogen atmosphere at

230 °C for 30 minutes to thereby perform random transesterification. After cooling, the reaction mixture was separated in a separatory funnel and the bottom layer was removed. Then a 10 % aqueous solution of citric acid was added and the mixture was stirred and allowed to stand for separation. Then the upper layer was dehydrated and filtered. The random transesterification product thus obtained was passed through a thin-film molecular distillation device at 190 °C and 0.01 mmHg to thereby give 337 g of diglyceride (I) available in the present invention.

Diglyceride (II): 91 g of hydrogenated rapeseed oil having an iodine value of 72.0 and containing 57.2 % of trans-acids was blended with 9 g of glycerol. 0.15 % by weight based on the total system of sodium methylate was added thereto and the mixture was stirred under a nitrogen atmosphere at 80 °C for 60 minutes to thereby perform random transesterification. The random transesterification product thus obtained was fed to a silica gel column and developed with a mobile phase of hexane and diethyl ether at a weight ratio of 50 : 50 to thereby give 48 g of diglyceride (II) available in the present invention.

Diglyceride (III): 88 g of hydrogenated palm kernel oil having an iodine value of 0.5 was blended with 12 g of glycerol. 0.15 % by weight based on the total system of sodium methylate was added thereto and the mixture was stirred under a nitrogen atmosphere at 80 °C for 60 minutes to thereby perform random transesterification. After the completion of the reaction, the obtained random transesterification product was fed to a silica gel column and developed with a mobile phase of hexane and diethyl ether at a weight ratio of 50 : 50 to thereby give 44 g of diglyceride (III) to be used for comparison with the present invention.

Table 1 shows the compositions of the diglycerides (I), (II) and (III).

Table 1 Composition of diglyceride

Glyceride composition (Z by wt.)	Monoglyceride	Diglyceride (I)		Diglyceride (II)		Diglyceride (III)	
		0.8		0.0		0.0	
	Diglyceride	8 5.6		9 6.4		9 7.1	
	Triglyceride	1 3.6		3.6		2.9	
Fatty acid composition (Z by wt.)	Capric acid	C8	—	—	—	4.0	—
	Caprylic acid	C10	—	—	—	3.6	—
	Lauric acid	C12	—	—	—	4 6.2	—
	Myristic acid	C14	0.7	—	—	1 5.6	—
	Palmitic acid	C16	4 4.2	4.1	—	8.9	—
	Stearic acid	C18	2 8.1	1 2.2	—	2 1.4	—
	Oleic acid	C18F1	2 1.3	7 7.5	—	0.3	—
	Linolic acid	C18F2	5.0	0.2	—	—	—
	Gadoleic acid	C20F1	—	3.0	—	—	—
	Erucic acid	C22F1	—	2.3	—	—	—

Note: C18F1 represents an unsaturated fatty acid having one double bond and 18 carbon atoms. Namely, C18Fn represents an unsaturated fatty acid having n double bonds and 18 carbon atoms.

Preparation of suppository base

The abovementioned lauric-type fats (A), (B) and (D) were blended with the diglycerides (I) and (II) to prepare suppository bases according to the present invention. Further lauric-type fats (A), (B), (C) and (D) were employed as comparative examples of suppository bases which have been most widely employed.

Table 2 Preparation of suppository base

	Composition (part by weight)
Ex. 1	lauric-type-fat (A) 95 : diglyceride (I) 5
Ex. 2	lauric-type-fat (B) 90 : diglyceride (I) 10
Ex. 3	lauric-type-fat (D) 93 : diglyceride (II) 7
Comp. Ex. 1	lauric-type-fat (A) 100
Comp. Ex. 2	lauric-type-fat (B) 100
Comp. Ex. 3	lauric-type-fat (C) 100
Comp. Ex. 4	lauric-type-fat (D) 100
Comp. Ex. 5	cacao butter (iodine number 35) 90 : diglyceride (I) 10
Comp. Ex. 6	lauric-type-fat (B) 90 : diglyceride (III) 10

Melting properties of suppository base

Table 3 shows the melting properties, which are required as a suppository base, of the suppository bases as prepared above. Table 3 obviously indicates that the melting properties of the suppository bases of Ex. 1 to 3 according to the present invention are sufficiently comparable to those of Comp. Ex. 1 to 4 which are widely used at present. Namely, the suppository bases comprising specific lauric-type fats and non-lauric-type glycerides of the present invention never damage sharp melting properties nor appropriate hardness.

On the other hand, when the non-lauric-type diglyceride is blended with cacao butter, which is a typical non-lauric-type fat, in place of the lauric-type fats, which is another component of the present invention, the melting properties showed a significant decrease (cf. Comp. Ex. 5). Namely, the hardness is insufficient in spite of its melting point in this case. Further the relatively high iodine value, i.e., around 34, thereof makes its oxidation stability poor.

Table 3 Melting properties of suppository base

Suppository base	m.p. (°C)	Solid fat content (% by wt.)			
		25.0°C	30.0°C	32.5°C	35.0°C
Ex. 1	3 5.2	8 7	6 9	3 6	4
Ex. 2	3 5.6	8 8	7 0	3 8	6
Ex. 3	3 4.9	6 4	4 7	2 1	5
Comp. Ex. 1	3 5.2	8 7	6 7	3 5	4
Comp. Ex. 2	3 4.5	9 0	7 3	4 0	3
Comp. Ex. 3	3 4.8	7 2	5 5	2 3	6
Comp. Ex. 4	3 5.2	6 1	4 5	2 0	4
Comp. Ex. 5	3 6.4	6 2	3 8	2 1	11
Comp. Ex. 6	3 4.8	8 3	6 6	3 6	3

Note: m.p.: according to the Pharmacopoeia of Japan.

Solid fat content: determined by pulse NMR.

Moldability test of suppository base

The suppository bases of Examples 1 to 3 each comprising lauric-type fat and non-lauric-type diglyceride, those of Comparative Examples 1 to 4 widely applied at present and that of Comparative Example 6 comprising lauric-type fat and lauric-type diglyceride showed sufficient melting properties. Suppositories were molded with the use of these bases. That is, each base was completely molten at 45°C and 8 % by weight of aspirin was added thereto. The obtained mixture was cooled to 40°C under stirring. 1.9-g portions of the suppository composition dissolved and dispersed at 40°C were poured into plastics suppository containers and rapidly cooled therein to 5°C and 20°C to thereby give molded suppositories. 100 molded products prepared from each base were taken out of the containers and the surface of each product was observed. Thus cracked or damaged ones and those showing pinhole were counted and the moldability and workability were evaluated therefrom. Table 4 shows the result.

Table 4 Moldability and workability test of suppository

Suppository base	Hydroxyl value	Number of inferior ones per 100 and condition					
		40°C + 5°C			40°C + 20°C		
		Damaged	Pin- hole	Surface condition	Damaged	Pin- hole	Surface condition
Ex. 1	18	0	0	⊙	0	0	⊙
Ex. 2	7	2	0	⊙	0	0	⊙
Ex. 3	10	0	0	⊙	0	0	⊙
Comp. Ex. 1	15	49	100	X	34	91	X
Comp. Ex. 2	2	52	100	X	38	88	X
Comp. Ex. 3	39	1	65	○	0	24	○
Comp. Ex. 4	5	7	100	X	2	97	Δ
Comp. Ex. 6	8	27	100	X	25	80	X

Note: Surface condition ⊙: glossy and dense.

○: unglossy and dense.

Δ : unglossy and partly spotted.

X : unglossy and entirely spotted.

The result as shown in Table 4 suggests that the suppository bases of the present invention gave products of excellent qualities, having glossy and uniform surface and showing little cracking and pinhole even when subjected to forced cooling. On the other hand, conventional ones comprising lauric-type fat alone gave suppositories of insufficient qualities, although those having higher hydroxyl values showed somewhat improvement. In the case of the suppository base prepared by blending lauric-type fat with lauric-type diglyceride mainly comprising lauric acid, the obtained suppository had insufficient qualities (cf. Comparative Example 6). Thus the suppository base of the present invention comprising specific lauric-type fat and non-lauric-type diglyceride can give suppositories of excellent moldability and workability.

Chemical stability test

The molded suppositories obtained in the molding test of the suppository bases as mentioned above were stored in thermostats at 20°C and 40°C for six months. Then the content of salicylic acid in each suppository was determined by high-performance liquid chromatography in order to examine the extent of the decomposition of aspirin. Table 5 shows the result.

Table 5 Chemical stability of molded suppository

Suppository base	Hydroxyl value	Salicylic acid content (% by wt.)		
		Before storage	Stored at 20°C for 6 m.	Stored at 40°C for 6 m.
Ex. 1	18	0.00	0.63	5.97
Ex. 2	7	0.00	0.43	5.13
Ex. 3	10	0.00	0.53	6.01
Comp. Ex. 1	15	0.00	0.59	5.86
Comp. Ex. 2	2	0.00	0.50	6.01
Comp. Ex. 3	39	0.00	2.45	16.97
Comp. Ex. 4	5	0.00	0.49	5.33
Comp. Ex. 6	8	0.00	0.48	5.88

Example 4 and Comparative Example 7

A suppository was produced with a suppository container, using a suppository base (Y) of lauric-type triglyceride and 10 wt.% of diglyceride, corresponding to the base of Example 2, and 1 mg of prednisolone acetate and 5 mg of dibucaine hydrochloride per one suppository. A control suppository was prepared in the same way as above, except that lauric-type triglyceride only was used as a base (X). A discharging test was effected with these suppositories. A sample of 1 ml was taken out in 15, 30, 60 and 120 minutes and analyzed with the high speed liquid chromatography. The test was repeated twice and results were obtained on the average of the two tests and are shown in Table 6 and 7 and Fig. 1 and 2.

Table 6 Discharging of prednisolone acetate

time (min)	Comparative Example 7		Example 4	
	base (X)		base (Y)	
	discharging amount (μ g)	rate (%)	discharging amount (μ g)	rate (%)
15	62.5	6.25	173.0	17.30
30	140.0	14.00	234.0	23.40
60	187.5	18.75	350.5	35.05
120	262.0	26.20	480.0	48.00

Table 7 Discharging of dibucaine hydrochloride

time (min)	Comparative Example 7		Example 4	
	base (X)		base (Y)	
	discharging amount (μ g)	rate (%)	discharging amount (μ g)	rate (%)
15	313.5	6.27	504.0	10.08
30	421.0	8.42	563.5	11.27
60	496.0	9.92	722.0	14.44
120	569.0	11.38	858.0	19.16

Example 5

A suppository composition for hemorrhoids was prepared, using 1 mg of prednisolone acetate, 5 mg of dibucaine hydrochloride, 20 mg of tocopherol acetate, 100 mg of zinc oxide and 1474 mg of the base Y of hard fat per one suppository. The composition was heated up to 60°C and blended. It was introduced by 1.6 g into a plastic container for suppository, cooled and moulded. The suppository was administered to 30

patients of hemorrhoids every morning and everytime time before they go to bed for ten days. Changes in the patients were observed. Results are shown in Table 8. It is noted that the composition was useful to treat the hemorrhoids.

Table 8 Clinical results of the suppository

conditions	before use	after use
pain		
always feeling	7	0
feeling when the body moves	56	19
feeling on evacuation	28	21
no	19	60
bleeding		
very badly	10	0
some drops attaching to paper	42	22
	45	23
no	3	55
swelling		
very badly	22	8
considerably	37	26
slightly	41	37
not	0	29
itching		
very badly	0	0
considerably	11	0
slightly	33	17
not	56	83

Results are shown in terms of a percent of persons having the condition.

Claims

1. A suppository base which comprises 80 to 99 percent by weight of lauric-type fat composition having a hydroxyl value of 20 or lower and containing glycerides of fatty acids having 8 to 18 carbon atoms and 1 to 20 percent by weight of non-lauric-type diglycerides of fatty acids having 14 to 22 carbon atoms.
2. A suppository base as claimed in Claim 1, which comprises 90 to 99 percent by weight of said glycerides and 1 to 10 percent by weight of said non lauric-type diglycerides.

3. A suppository base as claimed in Claim 1 or 2, in which said lauric-type fat composition has a hydroxyl value of 10 or lower.
4. A suppository which comprises the suppository base as defined in Claim 1 and a pharmacologically-effective amount of a drug.
5. A suppository as claimed in Claim 4, in which said drug is a steroid hormone, a local anaesthetic, an antipyretic analgesic, a non-steroid antiphlogistic or a drug for controlling functioning of the intestine and/or constipation.

Revendications

1. Excipient pour suppositoire, comprenant de 80 à 99 % en poids d'une composition de graisse laurique ayant un indice d'hydroxyle de 20 ou moins, et contenant des glycérides d'acides gras comportant de 8 à 18 atomes de carbone, et de 1 à 20 % en poids de diglycérides non lauriques dérivés d'acides gras comportant de 14 à 22 atomes de carbone.
2. Excipient pour suppositoire selon la revendication 1, comprenant de 90 à 99 % en poids de ces glycérides, et de 1 à 10 % en poids desdits diglycérides non lauriques.
3. Excipient pour suppositoire selon la revendication 1 ou 2, dans lequel ladite composition de graisse laurique, a un indice d'hydroxyle de 10 ou moins.
4. Suppositoire comprenant l'excipient pour suppositoire selon la revendication 1, et une quantité pharmacologiquement efficace d'un médicament.
5. Suppositoire selon la revendication 4 dans lequel le médicament est une hormone stéroïdienne, un anesthésique local, un analgésique antipyrétique, un anti-inflammatoire non stéroïdien, ou un médicament de régulation de la fonction de l'intestin et/ou de lutte contre la constipation.

Ansprüche

1. Suppositoriengrundlage, umfassend 80 bis 99 Gew.-% einer Fettzusammensetzung vom Laurintyp mit einem Hydroxylwert von 20 oder weniger, enthaltend Glyceride von Fettsäuren mit 8 bis 18 Kohlenstoffatomen und 1 bis 20 Gew.-% Diglyceride von Fettsäuren mit 14 bis 22 Kohlenstoffatomen, die nicht vom Laurintyp sind.
2. Suppositoriengrundlage nach Anspruch 1, umfassend 90 bis 99 Gew.-% der Glyceride und 1 bis 10 Gew.-% der Diglyceride vom Nichtlaurin-Typ.
3. Suppositoriengrundlage nach Anspruch 1 oder 2, wobei die Fettzusammensetzung vom Laurintyp einen Hydroxylwert von 10 oder weniger besitzt.
4. Suppositorium, umfassend die Suppositoriengrundlage nach Anspruch 1 und eine pharmazeutisch wirksame Menge eines Arzneimittels.
5. Suppositorium nach Anspruch 4, wobei das Arzneimittel ein steroides Hormon, ein lokales Anästhetikum, ein antipyretisches Analgetikum, ein nichtsteroides Antiphlogistikum oder ein Arzneimittel für die Steuerungsfunktion des Darms und/oder der Konstipation ist.

Fig. 1 Discharging of prednisolone acetate

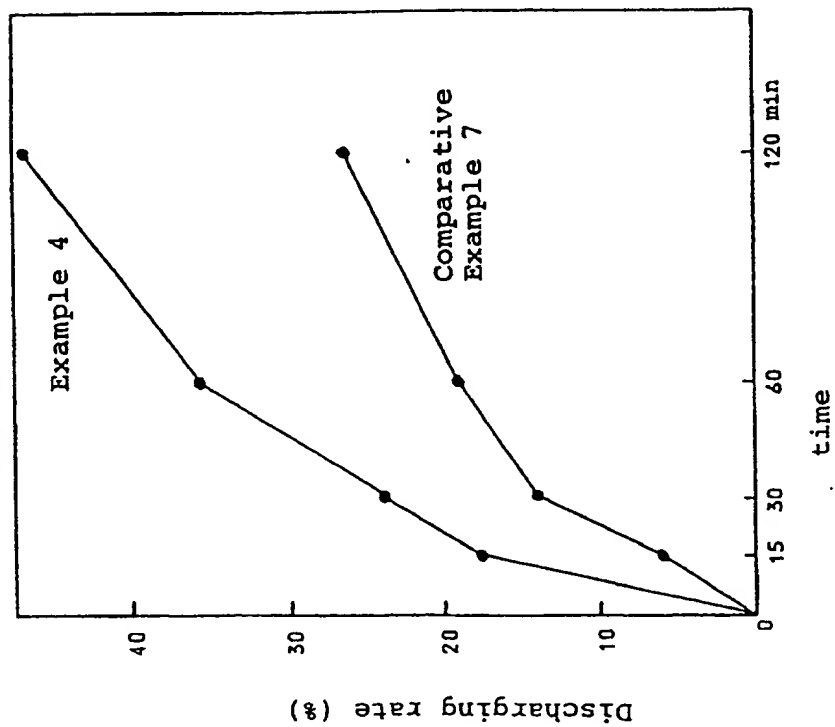


Fig. 2 Discharging of dibucaine hydrochloride

